PRODUCT BULLETIN

Eco-PT™ 250
Power-Trowel Epoxy Overlay Resurfacer

Eco-PT™ Topcoat/ Eco-HT™ Topcoat
Topcoat for Eco-PT™ 250

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DESCRIPTION:
Overlay is a three-component filled, 100% solids epoxy system for resurfacing eroded interior concrete floors. Topcoats are two-component, 100% solids epoxies for sealing the overlay.

USES:
- Ideal for repairing large eroded areas such as main traffic aisles, loading docks and other spaces subjected to heavy traffic and abuse.

ADVANTAGES:
- Safe to use around solvent sensitive products such as food, beverages, pharmaceuticals and cosmetic products
- Less costly than concrete replacement or capping
- Cleans easily, saving detergent, labor and water
- No VOC (0 g/L). (Complies with SCAQMD VOC regulations. LEED credits available.)

STORAGE: Materials should be stored indoors between 65ºF (18ºC) and 90ºF (32ºC).

SHELF LIFE: Two years from date of manufacture.

PACKAGING OPTIONS / PART NUMBERS:
Eco-PT 250:
900 sq. ft. (83.61 m^2) kit / 60690
11,700 sq. ft. (1,086.97 m^2) kit / 60690BLK (*Contractor Only*)

Eco-PT Topcoat:
3 gallons (11.34 litres) / 370516

Eco-HT Topcoat
2.5 gallons (9.45 litres) / 370248

OPTIONS:
Colors: Tennant Colorants may be added to Eco-PT 250, Eco-PT Topcoat and Eco-HT Topcoat. Use colorants at a rate of one unit per 3-bag mix of Eco-PT 250, 3-gallon (11.34 litres) unit of Eco-PT Topcoat and 2.5-gallon (9.45 litres) unit of Eco-HT Topcoat. Standard Colorants--White, Light Gray, Yellow and Rotunda Red will not impart total hide. Use these colorants at a rate of two units per 3-bag mix of Eco-PT 250, 3-gallon (11.34 litres) unit of Eco-PT Topcoat and 2.5-gallon (9.45 litres) unit of Eco-HT Topcoat. (White and Light Gray are only recommended if topcoating with a non-yellowing urethane.)

Traction: To improve traction in slip hazard areas, use 292 Grit for applications less than 8 mils (203.2 microns). See 292 Grit Product Bulletin.

LIMITATIONS:
UV/Light Stability: This product is not light stable and will yellow/amber over time.

MATERIAL PROPERTIES (LIQUID):

Property/ Test Method	Eco-PT 250 Results	Eco-PT Topcoat Results	Eco-HT Topcoat Results
Flash Point *ºF/C* Seta Closed Cup ASTM D3278	A - >200 / 93 B - >200 / 93	A - >200 / 93 B - >200 / 93	A - >200 / 93 B - >200 / 93
Percent Solids, *by wt* ASTM D2369	A - 100 B - 99.62 C - 100	A - 100 B - 99.62	A - 100 B - 99.62
Density *lb/gal / kg/L* ASTM D1475	A - 9.23 (1.11) B - 8.39 (1.01) C - 21.64 (2.60) A/B/C 18.81 (2.26)	A - 9.41 (1.13) B - 8.44 (1.01) A/B - 9.09 (1.09)	A - 9.41 (1.13) B - 8.44 (1.01) A/B - 9.09 (1.09)
Viscosity, *cps* Brookfield ASTM D2196	A - 800-1100 B - 170-220	A - N/A (Paste) B - 350-550 A/B - 4000-6000	A - N/A (Paste) B - 350-550 A/B - 4000-6000
Volatile Organic Compound - VOC *lb/gal (g/L)* ASTM D3960	A/B/C 0 (0)	A/B 0 (0)	A/B 0 (0)

CURED COATING PROPERTIES (DRY FILM): Eco-PT 250

Property	Test Method	Results
Coefficient of Friction - COF James Friction Tester	ASTM D2047	0.60-0.63 (with 2 coats Eco-PT Topcoat)
Coefficient of Thermal Linear Expansion, *mm/mm/°C*	ASTM D696	$1.97x10^{-5}$
Compressive Strength, *psi (MPa)*	ASTM C579	10,000 (68.95)
Flexural Strength, *psi (MPa)*	ASTM D790	3,700 (25.51)
Flexural Modulas of Elasticity, *psi (MPa)*	ASTM D790	$1.8x10^{6}$ ($0.01x10^{7}$)
Heat Deflection Temperature	ASTM D648	140°F (60°C) @ 264 psi (1.82 MPa) load 151°F (66°C) @ 66 psi (0.46 MPa) load
Izod Impact Strength, *lb/in (N/m)*	ASTM D256	0.26 (45.53)
Tensile Strength, *psi (MPa)*	ASTM C307	1,690 (11.65)
Shore D Hardness	ASTM D2240	80-85 @ 0 sec 75-80 @ 15 sec

CURED COATING PROPERTIES (DRY FILM):

Property/Test Method	Eco-PT Topcoat	Eco-HT Topcoat
Abrasion Resistance, mg loss Taber Abraser* ASTM D4060*	83	100
Tensile Strength, *psi (MPA)* ASTM D2370	8,000 (55.16)	8,000 (55.16)
Percent Elongation ASTM D2370	5	5
Shore D Hardness ASTM D2240	75-80 @ 0 sec 65-70 @ 15 sec	75-80 @ 0 sec 70-75 @ 15 sec

*CS-17 Taber Abrasion Wheel, 1,000 gram load, 1,000 revolutions
Results are based on conditions at 77°F (25°C), 50% RH.

APPLICATION CHARACTERISTICS:

Coverage rate will depend upon application thickness as well as the texture and porosity of the concrete.

	Eco-PT 250	
Coverage Rate, *ft² (m²) /3 bag mix)*	56-70 (5.2-6.5)	
Application Thickness, inches (mm)	1/4-3/16 (6.35-4.76)	
	Eco-PT Topcoat	**Eco-HT Topcoat**
Coverage Rate, *ft²/gal (m²/L)*	200-320 (4.92-7.87)	200-320 (4.92-7.87)
Application Thickness, *wet/dry mils (microns)*	5-8 per coat (127-203)	5-8 per coat (127-203)

CHEMICAL RESISTANCE - UNPIGMENTED

	Eco-PT Topcoat 1 / 7 Day(s)	Eco-HT Topcoat 1 / 7 Day(s)
Acids, Inorganic		
10% Hydrochloric Acid	E / E	E / E
30% Hydrochloric Acid (Muriatic)	E / E	E / E
10% Nitric Acid	E / G	E / E
50% Phosphoric Acid	F / P	G / G
37% Sulfuric Acid (Battery Acid)	G / G	G / G
Acids, Organic		
10% Acetic Acid	F / P	G / F
10% Citric Acid	E / G	E / E
Oleic Acid	G / F	E / E
Alkalies		
10% Ammonium Hydroxide	E / E	E / E
50% Sodium Hydroxide	E / E	E / E
Solvents (Alcohols)		
Ethylene Glycol (Antifreeze)	E / E	E / E
Isopropyl Alcohol	F / F	E / G
Methanol	F / F	P / P
Solvents (Aliphatic)		
d-Limonene	E / E	E / E
Jet Fuel - JP-4	E / E	E / E
Gasoline	E / E	E / E
Mineral Spirits	E / E	E / E
Solvents (Aromatic)		
Xylene	F / F	E / E
Solvents (Chlorinated)		
Methylene Chloride	P / P	P / P
Solvents (Ketones & Esters)		
Methyl Ethyl Ketone (MEK)	P / P	P / P
Propylene Glycol Methyl Ether Acetate (PMA)	F / F	G / F
Miscellaneous Chemicals		
20% Ammonium Nitrate	E / E	E / E
Brake Fluid	F / F	G / G
Bleach	G / G	E / E
Motor Oil (SAE 30)	E / E	E / E
Skydrol® 500B	F / P	E / E
Skydrol® LD4	F / P	E / E
20% Sodium Chloride	E / E	E / E
1% Tide® Laundry Soap	E / E	E / E
10% Trisodium Phosphate	E / E	E / E

Based on 1-day and 7-day spot testing on concrete.
Coating cured 2 weeks prior to testing.

Legend:

E - Excellent (No Adverse Effect) - Recommended.
G - Good (Limited Adverse Effect) - Use for short-term exposure only.
F - Fair (Moderate Adverse Effect) - Not recommended.
P - Poor (Unsatisfactory) - Little or no resistance to chemical.
Note: Reduced chemical resistance and increased staining is possible in pigmented versions of this system.

Tide® is a registered trademark of Proctor and Gamble.
Skydrol® is a registered trademark of Monsanto.

IMPORTANT:

READ AND FOLLOW ALL PRECAUTIONS AND INSTRUCTIONS BEFORE PROCEEDING.

PRELIMINARY FLOOR INSPECTIONS

CHECK THE CONCRETE: Concrete must be structurally sound and free of curing membrane, paint or other sealer. If you suspect that the concrete has been previously sealed, call Tennant Company, technical support for further instructions.

CHECK FOR MOISTURE: Concrete must be dry before application of this floor coating material. Concrete moisture testing must occur. Calcium chloride testing or in-situ relative humidity testing is recommended. Readings must be below 3 pounds per 1,000 square feet (1.5 kg per 150m^2) over a 24-hour period on the calcium chloride test or below 75% relative internal concrete humidity. Test methods can be purchased at **www.astm.org**, see ASTM F1869 or F2170, respectively or follow instructions from the suppliers of these tests.

NOTE: *Although testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or the vapor barrier is not functioning properly and/or you suspect you may have concrete contamination from oils, chemical spills or excessive salts.*

CHECK THE TEMPERATURE AND HUMIDITY: Floor temperature and materials should be between 65°F (18°C) and 90°F (32°C). Humidity must be less than 80%. **DO NOT** coat unless floor temperature is more than five degrees over the dew point.

APPLICATION EQUIPMENT

- Protective clothing
- Jiffy® Mixer Blade [Tennant Part #: 08643-1 (small unit) or 08643-5 (large unit)]
- Slow speed drill (500 rpm or less)
- 18-24" (457.2-609.6 mm) Flat Rubber Squeegee
- Roller Assembly
- Shed Resistant, 3/8" (10 mm) Nap Rollers
- Mortar mixer
- Screed box
- Trowel (stainless steel, 3" x 12" (76.2 x 304.8 mm)
- Epoxy power trowel with combination blades
- Spiked shoes

ASSEMBLE EQUIPMENT: Due to the limited pot life of the material, all application equipment, etc. should be ready for immediate use.

PREPARATION

Detergent scrub and rinse with clean water to remove surface dirt, grease, oil and contaminants.

Steel Shot Blast (minimum shot size of 330): Use magnetic broom to remove excess shot, sweep to remove large debris and vacuum to remove fine dust.
Scarify: Sweep to remove large debris and vacuum to remove fine dust.

Key in all termination points.

JOINTS: Cracking of the resurfacer will occur over joints that are overlayed and later move. Because resurfacers are not flexible, joints that might move should be honored (cut) after the installation and filled with an appropriate material.

Depending on the preference of the facility owner, joints may or may not be filled. If the joints are filled, non-moving joints, i.e. contraction or control joints, can be hard filled with thickened, 100% solids epoxy or with a semi-rigid joint filler such as Eco-PJS™ or Eco-EJF™. Construction joints less than one inch wide may also be filled with Eco-PJS. Isolation or expansion joints must be filled with a flexible material designed for this purpose. Coating applied over filled joints will crack if there is concrete movement.

APPLICATION - PRIMER

Eco-PT 250 is applied over Eco-MPE primer that is still wet or sticky--within 4 hours. It is critical that all concrete is covered to ensure proper adhesion of the overlay. (See Eco-MPE Product Bulletin for application instructions.)

NOTE: *The kits come with enough Eco-MPE to prime at 180-220 sq. ft. per gallon (4.4-5.4 m^2 per litre) for ¼" (6.35 mm) Eco-PT 250 applications. If Eco-PT 250 is being put down at 3/16" (4.76 mm) and/or the floor is extremely porous or rough, additional primer will be needed.*

APPLICATION - OVERLAY

COVERAGE RATE will depend upon thickness. A three bag mix of Eco-PT 250 will nominally cover (finished floor):
56 ft^2 (5.2 m^2) @ 1/4" (6.35 mm)
70 ft^2 (6.5 m^2) @ 3/16" (4.76 mm)

COLORS: Premix Tennant Colorant before adding to Eco-PT 250 to ensure uniform color. Add colorant to Eco-PT 250 Part A and mix using a Jiffy® mixer blade and slow speed drill.

POUR PART C into the mortar mixer. Begin mixing.

ADD PART B (1 qt / (0.95 litres) TO PART A (1.25 gal / 4.73 litres). ***POTLIFE****: Mix only enough material which can be screeded and troweled in a 15 minute period.*

MIX FOR 1 MINUTE or until thoroughly mixed using the Jiffy® mixer blade and slow speed drill.

POUR THE MIXED PARTS A&B into the mortar mixer. Mix until uniform (approximately one minute). The resin needs to only wet out the sand.

POUR THE MIXED MATERIAL into the screed box. To achieve a 1/4" (6.35 mm) finished floor, set the screed box at 5/16" (7.94 mm). For a 3/16" (4.76 mm) floor, set the screed box at 1/4" (6.35 mm). If the material is too thick, it will be more difficult to level.

SCREED material over desired area. The use of spiked shoes will allow movement on the unfinished overlay.

USE HAND TROWELS for edges and touch up.

POWER TROWEL MATERIAL to compact and achieve finished texture as soon as possible with an epoxy power trowel (<50 rpm).

ALLOW RESURFACER TO CURE 6-8 hours [at 75°F (24°C)], before topcoating. Allow more time at low temperatures.

USE OF A TERRAZZO GRINDER OR SURFACE GRINDER to remove high spots and ensure a continuous surface is highly recommended. Vacuum up the loose material.

APPLICATION - TOPCOAT

TOPCOATS: Eco-PT 250 must be sealed with one coat of Eco-PT Topcoat or Eco-HT Topcoat. A second coat of Eco-PT Topcoat / Eco-HT Topcoat or any of the other Tennant coatings is highly recommended to achieve maximum performance.

COLORS: Premix Tennant Colorant before adding to Eco-PT Topcoat or Eco-HT Topcoat to ensure uniform color. Add colorant to Eco-PT Topcoat Part A or Eco-HT Topcoat Part A and mix using a Jiffy® mixer blade and slow speed drill.

ADD ECO-MPE/ECO-PT TOPCOAT Part B TO ECO-PT TOPCOAT PART A OR ECO-CRE/ECO-HT TOPCOAT PART B TO ECO-HT TOPCOAT PART A and mix well using a Jiffy® mixer blade and slow speed drill.

MIX FOR 2-3 MINUTES using a Jiffy® mixer blade. ***POTLIFE:*** *Mix only enough material which can be applied within 20 minutes.*

POUR THE MIXTURE IN A BEAD over the cured Eco-PT 250 mortar. **WITH A SQUEEGEE, SPREAD THE ECO-PT TOPCOAT** at 5-8 mils (127-203 microns) (200-320 sq. ft. per gallon / 4.92-7.87 m^2 per litre) **OR ECO-HT TOPCOAT** at 5-8 mils (127-203 microns) (200-320 sq. ft. per gallon / 4.92-7.87 m^2 per litre) and **BACKROLL WITH A 3/8" (10 mm) NAP ROLLER** for a uniform finish. The use of spiked epoxy shoes will allow freedom of movement on the wet floor.

NOTE: *To ensure a more uniform texture, a separate individual may finish roll by pushing or pulling a roller across the floor in one direction. Unpigmented Eco-PT Topcoat or Eco-HT Topcoat will dry "milky" if put down at more than 6 mils (152.4 microns).*

ALLOW COATING TO CURE 24 hours at 75°F (24°C) before opening to traffic. Allow more time at low temperatures.

APPLICATION OF ADDITIONAL COATINGS

If a second coat of Eco-PT Topcoat, Eco-HT Topcoat or a Tennant epoxy or urethane except Eco-HPS™ and Eco-HPS™ 100 is being applied within 24 hours at floor temperatures of 65-90°F (18-32°C), sanding is not required. **NOTE:** *This is a Tennant solution only,* ***DO NOT*** *try this with competitive epoxies.*

SANDING REQUIRED

Eco-PT Topcoat or Eco-HT Topcoat must be thoroughly sanded if applying Eco-HPS or Eco-HPS 100 (see chart below).

APPROXIMATE SAND TIME (hours) - °F (°C)

65 (18.3)	70 (21.1)	75 (23.9)	80 (26.7)	90 (32.2)
24	20	16	12	8

Eco-PT Topcoat or Eco-HT Topcoat must also be sanded if applying other Tennant urethanes after 24 hours. Use 80 grit paper except for Eco-HPS, Eco-HPS 100, Wear*Guard*™-CRU and Wear*Guard*™-CRU 250–use 100. The use of more aggressive paper will introduce deep grooves that will not be covered by a single, thin coat of urethane; swirl marks will be particularly evident if the topcoat is glossy. We recommend thorough sanding with a swing-type buffer so that multiple scratch marks cause an obvious gloss loss on all areas (depressions will remain shiny), and the floor is uniformly dulled. The ability to see individual scratch marks is an indication that sanding is not adequate. Scrub with detergent and rinse with clean water before coating and tack rag to remove fine dust.

TECHNICAL SUPPORT

For any preparation or application questions, please call Tennant technical support at 800-228-4943 ext. 6075 1800 226 843 Aust).

DISPOSAL

Dispose in accordance with federal, state and local regulations.

PLEASE SEE MATERIAL SAFETY DATA SHEET (MSDS) FOR SAFETY AND PRECAUTIONS.

USE PRODUCT AS DIRECTED.

KEEP OUT OF THE REACH OF CHILDREN.

MAINTENANCE GUIDELINES

Allow floor coating to cure at least one week before cleaning by mechanical means (e.g., sweeper, scrubber, disc machine).

Care: Proper maintenance will increase the life and help maintain the appearance of your new Tennant floor coating. Sweep and scrub your new coating regularly, as dirt and dust are abrasive and can quickly dull the finish, decreasing the life of your coating. Remove spills quickly as certain chemicals may stain and could possibly permanently damage the finish.

Use soft nylon brushes or white pads on your new floor coating. Polypropylene or abrasive bristle (Tynex®) brushes can cause premature loss of gloss.

Detergent: Tennant has a full range of detergents--general purpose to heavy duty--for your cleaning needs. For assistance in determining which detergent is right for your facility or for additional technical information call: 800-553-8033 US (1800 226 843 Aust).

Caution: Avoid scratching or gouging the surface. All floor coatings will scratch if heavy objects are dragged across the surface.

Do not drop heavy or pointed items on the floor as this may causing chipping or concrete popouts in the case of a weak cap.

Rubber tires can permanently stain the floor coating from plasticizer migration. Plexiglass® between the tire and the floor coating can prevent discoloration.

Rubber burns from quick stops and starts can heat the coating to its softening temperature, causing permanent marking.

Repair: Repair gouges or scratches or chip outs as soon as possible to prevent moisture or chemical contamination.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

This warranty applies to all Specialty Surface Coatings, with the following exceptions: Eco-Hard-N-Seal™, Eco-EDP™ (Electrostatic Dissipative Primer), Eco-EDE™ (Electrostatic Dissipative Epoxy), and SDS™ (Static Dissipative System). These products have a separate warranty policy.

Tennant Company warrants its Specialty Surface Coatings to be free from defective manufacture, improper formulation, and defective ingredients. Warranty covers replacement of materials only.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall Tennant or Seller be liable for any incidental, consequential, or special damages arising out of the use of Tennant Specialty Surface Coatings. **THE ONLY REMEDY OF THE USER OR BUYER, AND THE ONLY LIABILITY OF TENNANT AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES, OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE) SHALL BE REPLACEMENT OF THE PRODUCT OR, AT THE ELECTION OF TENNANT OR SELLER, RETURN OF THE PURCHASE PRICE.**

No representative of Tennant has authority to give any other warranty or assume other liability.

The presence of a Tennant employee during the application of Tennant's Specialty Surface Coatings does not extend or alter the warranty or limitations in any manner whatsoever.